UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,329	11/03/2003	Marcus da Silva	1959-11	5147

81178 7590 02/17/2011

Daniel P. Burke, Esq.
Daniel P. Burke & Associates, PLLC
240 Townsend Square
Oyster Bay, NY 11771

EXAMINER	
LEE, JUSTIN YE	
ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
02/17/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/700,329	SILVA ET AL.	
	Examiner	Art Unit	
	JUSTIN Y. LEE	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 16-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 7-13, 16-20 and 22-24* is/are rejected.

7)☒ Claim(s) *6 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to amendment filed on 11/8/10.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 7-13, 16-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Periyalwar (US 6,611,695) in view of Adachi et al. (US 2003/0064752 A1) and further in view of Corbell et al. (US 3,747,109).

Regarding claim 1, Periyalwar discloses a wireless communication system, comprising: a multi-beam directed signal system configured for directed wireless computing communication with a computing device; and an antenna assembly configured to receive the directed wireless communication and emanate wireless communication within a directed beam with the computing device (which reads on column 2 lines 50-67 and column 3 lines 1-54 and Fig. 1 and col. 4, lines 52-65, multi-beam 32-38 and Fig. 2 and col. 5, lines 40, antenna 42-64).

Periyalwar does not disclose a multi-beam directed signal system configured for 802.11 specification data packet wireless computing communication with a 802.11 client computing device; and wherein the multi-beam directed signal system is configured to

determine and adjust, by complimentary beam-forming, a transmission peak for a particular directed beam in a non-omni-directional manner based on operational information associated with signal routing, and further configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Adachi et al. further disclose a multi-beam directed signal system configured for 802.11 specification data packet wireless computing communication with a 802.11 client computing device (paragraph 44, the system is a 802.11 standard); and wherein the multi-beam directed signal system is configured to determine and adjust, by complimentary beam-forming, a transmission peak for a particular directed beam in a non-omni-directional manner based on operational information associated with signal routing, and further configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction (Fig. 12 and 15 and paragraph 148, 151, 162, 164, 167, and 171-174, the beam is adjusted to the direction of a device it is communicating to and narrows the beam on the device to reduce the null effect and maintaining power consumption for longer distance devices (complementary beam-forming). And a transmission null is directed to maximize the power associated with the transmission peak and minimize interference in the particular direction (all these is achieved with directing beam in a particular direction and narrows it in the device).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Adachi et al. into the teachings of

Periyalwar for the purposes of without influencing other communications therefore reducing/preventing interference in the network (paragraph 11).

Periyalwar and Adachi et al. do not teach increasing side lobe levels when beam-forming.

Corbell et al. further disclose increasing side lobe levels when beam-forming (col. 7, lines 16-19, the side lobes are increased to cover more area).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Corbell et al. into the teachings of Periyalwar and Adachi et al. for the purposes of improving the readiation detection within a generally rectangular area (col. 7, lines 16-19).

Regarding claim 2, Periyalwar discloses a multi-beam directed signal system is further configured to generate a second directed wireless computing communication to a second computing device, and wherein the antenna assembly is further configured to receive the second wireless communication and emanate a second directed computing communication beam for additional data communication with the second computing device (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 3, Periyalwar discloses a multi-beam directed signal system is further configured to generate a second directed wireless computing communication to a second computing device the antenna assembly is further configured to receive the second wireless computing communication and emanate a second directed communication beam for additional data communication with the second computing

device; and the antenna assembly is further configured to emanate the directed communication beam such that only the computing device will receive the data communication, and further emanate the second directed communication beam such that only the second computing device will receive the additional data communication (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 4, Periyalwar discloses a multi-beam directed signal system is multi-channel and further configured for directed wireless computing communication with a second computing device; the antenna assembly is further configured to emanate the directed communication beam for data communication with the computing device via a first channel; and the antenna assembly is further configured to emanate a second directed communication beam for additional data communication with the second computing device via a second channel (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 5, Periyalwar discloses a multi-beam directed signal system is multi-channel and further configured for directed wireless computing communication with a second computing device; the antenna assembly includes a phased array of antenna elements each configured to emanate a communication beam; the antenna assembly is further configured to emanate the directed communication beam from a first antenna element for the data communication with the computing device via a first channel; and the antenna assembly is further configured to emanate a second directed communication beam from a second antenna element for additional data

communication with the second computing device via a second Channel (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 7, Periyalwar discloses a multi-beam directed signal system is further configured for simultaneous directed wireless transmission to the computing device and directed wireless reception from a second computing device (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 8, Periyalwar discloses a antenna assembly is further configured to emanate the directed communication beam as an electromagnetic signal that includes transmission peaks and transmissions nulls within a coverage area of the communication beam (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 9, Periyalwar discloses a antenna assembly is further configured to emanate the directed communication beam as an electromagnetic signal that includes a signal transmission peak within a first coverage area and a signal transmission null within a second coverage area; and the antenna assembly is further configured to emanate a second directed communication beam as a second electromagnetic signal that includes a second signal transmission peak within the second coverage area and a second signal transmission null within the first coverage area (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 10, Periyalwar discloses a antenna assembly is further configured to emanate a second directed communication beam for the data communication with the computing device when the directed communication beam is

determined ineffective for data communication (which reads on column 2 lines 5067 and column 3 lines 1-54).

Regarding claim 11, Periyalwar discloses a multi-beam directed signal system is further configured to determine when the directed communication beam is ineffective for data communication with the computing device, and is further configured to generate the directed wireless communication for the data communication via a second directed communication beam; and the antenna assembly is further configured to emanate the second directed communication beam for the data communication with the computing device (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 12, Periyalwar discloses a antenna assembly is further configured to emanate multiple directed communication beams, and wherein the multi-beam directed signal system includes signal coordination logic that monitors the multiple directed communication beams each as an individual access point (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 13, Periyalwar discloses a multi-beam directed signal system includes signal coordination logic that controls a directed wireless transmission to the computing device and directed wireless reception from a second computing device such that the directed wireless transmission does not interfere with the directed wireless reception (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 16, Periyalwar and Adachi et al. and Corbell et al. together disclose a method, comprising: generating from a Wi-Fi switch a directed wireless

communication for 802.11 specification data packet communication with a 802.11 client computing device; receiving the directed wireless communication at an antenna assembly; emanating a directed communication beam, associated with a transmission peak which is adjusted relative to other beams of a multi-beam directed signal system by complementary beam-forming in a non-omni-directional manner, for the data communication with the computing device; and directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction (Perivalwar, which reads on column 2 lines 50-67 and column 3 lines 1-54 and Adachi et al., Fig. 12 and 15 and paragraph 44 and 148, 151, 162, 164, 167, and 171-174) and increasing side lobe levels when beam-forming (Corbell et al., col. 7, lines 16-19, the side lobes are increased to cover more area).

Regarding claim 17, Periyalwar discloses a generating a second directed wireless communication for additional data communication with a second computing device; receiving the second directed wireless communication at the antenna assembly; and emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device (Periyalwar, which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 18, Periyalwar discloses a generating a second directed wireless communication for additional data communication with a second computing device; receiving the second directed wireless communication at the antenna assembly;

emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device; and wherein the directed communication beam is emanated such that only the computing device will receive the data communication, and the second directed communication beam is emanated such that only the second computing device will receive the additional data communication (Periyalwar, which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 19, Periyalwar discloses a generating a second directed wireless communication for additional data communication with a second computing device; receiving the second directed wireless communication at the antenna assembly; emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device; and wherein the directed communication beam is emanated from a first antenna element of the antenna assembly, and the second directed communication beam is emanated from a second antenna element of the antenna assembly (Periyalwar, which reads on column 2 lines 50-67 and column 3 .lines 1-54).

Regarding claim 20, Periyalwar discloses a emanating a second directed communication beam, adjusted for a second transmission peak, for data communication reception from a second computing device, and wherein emanating the directed communication beam includes emanating the directed communication beam for data communication transmission to the computing device (Periyalwar, which reads on column 2 lines •50-67 and column 3 lines 1-54).

Regarding claim 22, Periyalwar discloses a emanating the directed communication beam includes emanating an electromagnetic signal that includes transmission peaks and transmissions nulls within a coverage area of the directed communication beam (which reads on column 2 lines 50-67 and column3 lines 1-54).

Regarding claim 23, Periyalwar discloses a determining that the directed communication beam is ineffective for the data communication with the computing device; and emanating a second directed communication beam for the data communication with the computing device (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Regarding claim 24, Periyalwar discloses a transmitting the data communication to the computing device via the directed communication beam; receiving a second data communication from a second computing device via a second directed communication beam; and controlling transmitting the data communication such that the data communication does not interfere with receiving the second data communication (which reads on column 2 lines 50-67 and column 3 lines 1-54).

Allowable Subject Matter

4. Claims 6 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 11/8/10 have been fully considered but they are not persuasive.

Regarding the Periyalwar reference, Applicant states that, Periyalwar reference does not describe any mechanism for adjusting beam characteristics, such as by associating a transmission peak and/or null with a particular communication beam.	In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Adachi reference is used to show this limitation (Fig. 12 and 15 and paragraph 148, 151, 162, 164, 167 and 171-174).
Regarding the Adachi reference, Applicant states that, Adachi application does not describe, teach, or suggest, and is not equivalent to, complementary beam	In contrast to Applicant's assertions, Adachi teaches beam-forming and using directional beam for communication (in Fig. 12 and 15 and paragraph 148, 151,

forming.	162, 164, 167 and 171-174). It is well known directed beam-forming would result in communication beam nulls thus reducing power consumption because power is efficiently used for a communication beam.
Applicant further argues that Periyalwar and Adachi does not teach a multi-beam directed signal system configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.	In contrast to Applicant's assertions, Adachi teaches the directed transmission beams are directed to certain directions, not to other directions (Fig. 12 and 15). Thus, power is only used for the beam directed in certain direction for communication without wasting power in the directions that do not require a communication beam.
Regarding the Corbell reference, Applicant states, Corbell does not relate to the field of communications.	In contrast to Applicant's assertions, Corbell is merely used to show increasing side lobe to cover more area. Just as claimed, only merely disclose increasing side lobe levels, but does not disclose how side lobe effects the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN Y. LEE whose telephone number is (571)272-5258. The examiner can normally be reached on M - Thu 9:30 to 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin Y Lee/
Examiner, Art Unit 2617
2/1/11